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Index to Recent American Botanical Literature.

Abies Menziesii—(Garden, xxx., 491.) An account of its introduction and cultivation in England.

Absorption of coloring Matter by the living Protoplasm of Vegetable Cells.—George Lincoln Goodale. (Am. Journ. Sci., xxxii., p. 486.)

Prof. Pfeffer has shown that when living vegetable cells are placed in very dilute solutions of certain coal-tar coloring matters, the protoplasm becomes distinctly colored, and remains tinged for a time. The best results are obtained by placing roots with root hairs in pure water with one ten-thousandth of one per cent. of any of the " methyl " colors except blue.

Agricultural Colleges.—How shall Botany be taught in.—A. N. Prentiss. (Am. Nat., xx., p. 970; from American Horticulturist.)

Black Rot (Physalospora Bidwellii, Sacc.)—Botanical Character of.—F. Lamson Scribner. (Bot. Gazette, xi., pp. 297–302; one plate.)

Botany of California and Parts Adjacent.—Studies in the.—V. Edward Lee Greene. (Bull. Calif. Acad. Sci., ii., pp. 125-154; one plate. Reprinted.)

In this contribution to the botany of western America Mr. Greene discusses " Some Genera which have been confused under the name *Brodiæa*," and proposes an entirely new arrangement of these Liliaceæ. He points out that nearly everything thus far written on these plants has been based on herbarium specimens alone, and shows that in drying, some characters which are apparent in the field may become obscured. The present paper is the result of five seasons' field study, during which many of the species have been examined as they grow. The genera adopted are *Brodiæa*, Smith, with six species; *Hookera*, Salisb., with eight; *Triteleia*, Dougl., with thirteen, and *Behria*, Greene, n. gen., with a single species, *B. tenuifolia*, Greene. Six of these species are new to science.

The second part of Mr. Greene's paper is on new or noteworthy species, mainly from the islands of Santa Cruz and San Miguel. Here are described *Helianthemum occidentale; Ceanothus arboreus;* two Lupines; three new species of the genus *Syr-*

matium, Vogel, which is distinguished from *Hosackia; Heuchera maxima*, an enormous plant for this genus; *Galium buxifolium; Matricaria occidentalis; Bœria Burkei; Cnicus fontinalis; Stephanomeria tomentosa;* two new species of *Malacothrix; Calais Clevelandi* and *Dowingia concolor.* The plate illustrates *Lyonothamnus asplenifolius.*

Canadian Filicinæ.—Additions to.—T. J. W. Burgess. (Trans. Roy. Soc. Canada, iv., pp. 9–18; reprinted.

Since the publication of the revision of Canadian Filicinæ by Professor Macoun and Dr. Burgess, in 1884, several additional ferns have been collected in Canada; among these are *Polypodium vulgare*, L., var. *Cambricum*, Willd., from Port Simpson, British Columbia; *Adiantum pedatum*, L., var. *rangiferinum*, Burgess, n. var., is a peculiar form, having "pinnules longer stalked, convex on the lower border, rising from the rachis at an acute angle, gradually tapering at the base, deeply cleft into narrow, toothed lobes on the upper side, rounded from below upward at the outer extremity, sori few." This also is from British Columbia. The varieties *marginatum*, *ramosum* and *multifidum* of *Scolopendrium vulgare*, Smith, have been collected near Woodstock, N. B. The discovery of *Aspidium Oreopteris* on Mt. Dawson has already been recorded; specimens referred to typical *Aspidium aculeatum*, Sw., were found by Mr. J. R. Anderson at Port Simpson, British Columbia.

Carices.—A Preliminary Synopsis of North American, including those of Mexico, Central America and Greenland, with the American Bibliography of the Genus.—L. H. Bailey, Jr. (Proc. Amer. Acad., xxii., pp. 59-157; reprinted.)

In this valuable paper Mr. Bailey gives us the results of his recent studies of sedges. The genus *Carex* is divided into two sub-genera; Eucarex, Cosson, contains the species bearing separated staminate and pistillate spikes, three-parted styles and triquetrous achenia; Vigneæ, Koch, include the species with staminate flowers borne at the base or apex of the pistillate spikes and having lenticular achenia. As these sub-genera are considered in the order named, the arrangement of the species becomes very different from that of Boott in Gray's Manual, or that of Dewey in Wood's Classbook. The following changes in the nomenclature of species as published in recent American botanical works are made; the accompanying notes may be of interest:

C. rostrata, Michx., becomes *C. Michauxiana*, Bœckl., Michaux's name being preoccupied by Withering for a very different plant; the southern, slender forms of *C. folliculata*, L., with slightly awned scales are referred to var. *australis*, Bailey; *C. lupulina*, Muhl., is *C. lurida*, Wahl., the older name, the *C. lupuliformis*, Sartw. is referred to this as var. *polystachya*, Bailey, and *C. Bellavilla*, Dewey, as var. *divergens*, Bailey; *C. pulla*, Gooden. is *C. sexatilis*, L., an Old World species and *C. miliaris*, Michx., is made var. (?) *miliaris*, Bailey, its systematic position being uncertain; *C. ampullacea*, Gooden, is *C. rostrata*, Withering, the latter name having one year's priority and *C. utriculata*, Boott, is referred to this as var. *utriculata*, Bailey; *C. Vaseyi*, Dewey, is included in *C. monile*, Tuckerm.; *C. Olneyi*, Boott, is regarded as a hybrid of *bullata* × *utriculata* and *C. tentaculata*, var. (?) *altior*, Boott, as one of *tentaculata lurida; C. spissa*, Bailey, is a gigantic new species from the southwest; *C. lanuginosa*, Michx. is *C. filiformis*, L., var. *latifolia*, Bœckl.; *C. aristata*, R. Br. and *C. mirata*, Dewey, are reduced to *C. trichocarpa*, Muhl., var. *aristata*, Bailey; *C. paludosa*, Gooden., is *C. acutiformis*, Ehrh. and is introduced in Eastern Mass.; *C. rigida*, var. *Bigelovii*, Tuckerm., is regarded as *C. vulgaris*, Fries, var. *hyperborea*, Boott; *C. miliacea*, Muhl., is *C. prasina*, Wahl., the older name; *C. salina*, Wahl., is given as ranging from Boston to Labrador in salt marshes: it may be noted that the late Dr. Knieskern supposed that he had this species from Ocean County, N. J., as is recorded in his Catalogue, but his large herbarium is destroyed, and none of his specimens of the plant extant; *C. Barbaræ*, Dewey, is a curious species (poorly represented in the Herbaria) from Santa Barbara, Cal., and a few other stations, under which Mr. Bailey places *C. Schottii*, Dewey and *C. Prescottiana*, Olney. Olney's label with the original of *C. Barbaræ* in Herb. Torrey reads "guess *C. cryptocarpa*, Meyer"; *C. gynandra*, Schw., is reduced to *C. crinita*, Lam., var. *gynandra*, Schw. & Torrey; Muller's Nos. 1336, 649 and 1977 from Orizava fall in this Section, Cryptocarpeæ, perhaps in *C. Ehrenbergiana*, Bœckl., which by a misprint, we suppose, is said to have spikes one to four *feet* long; *C.*

sempervirens, Olney, of the Pacific slope is *C. frigida,* Allioni; *C. irrigua,* Smith, is *C. Magellanica,* Lam.; *C. Hartwegii,* Boott, of Mexico, is *C. cladostachya,* Wahll, and is Muller's No. 2014; *C. polystachya,* Wahl., occurs in Porto Rico, an additional station to those in Cuba and Jamaica cited by Mr. Bailey; *C. Smithii,* Porter, is referred to *C. triceps,* Michx.—erroneously, we believe, for the plant appears to possess characters which should place it at least in varietal rank; *C. longirostris,* Torrey, has recently been collected by Dr. Best in Hunterdon Co., N. J., a station which slightly increases its southeastern distribution as given by Mr. Bailey; *C. Knieskernii,* Dewey, is supposed to be a hybrid of *arctata* × *formosa,* and *C. Sullivantii,* Boott, as a hybrid of *gracillima* × *pubescens; C. glabra,* Boott, becomes *C. venusta,* Dewey, var. *glabra,* Bailey; *C. flaccosperma,* of Gray's Manual, is *C. glaucodea,* Tuckerm., while the true *flaccosperma,* Dewey, is a far southern plant; a convenient key is given to the varieties of *C. laxiflora,* Lam.. var. *striatula,* Carey (var. *blanda,* Boott), being the commonest; *C. ptychocarpa,* Steud, is another species of this group distinguished by its glaucous leaves, small, sessile staminate spike and short culm, ranging from northern New Jersey southward; *C. Meadii,* Dewey, is reduced to *C. tetanica,* Schk. var. *Meadii,* Bailey; *C. inops,* Bailey, is a new species of the Montanæ from Mt. Hood, Oregon; *C. tenax,* Chapm., is *C. Chapmani,* Sartwell; *C. Fraseriana,* Sims, is *C. Fraseri,* Andrews; *C. arenaria,* L., the "Sand Carex" of Europe, was collected by McMinn near Norfolk, Va.; *C. retroflexa,* Muhl., is reduced to *C. rosea,* Schk. var. *retroflexa,* Torrey; *C. stellulata,* Gooden., is *C. echinata,* Murray and its var. *scirpoides* becomes var. *macrostachys,* Bœckl., of the latter, in which *C. sterilis,* Willd., is included; our common forms of *C. canescens,* L., are referred to its var. *alpicola,* Wahl., and the var. *polystachya,* Boott, of New England and British America is recognized as such; *C. lagopodioides,* Schk., is *C. tribuloides,* Wahl., and *C. cristata,* Schw., is made var. *cristata,* Bailey, of the latter: we had regarded *cristata* as sufficiently distinct; *C. straminea,* Schk., is stretched to include an immense number of forms: *C. mirabilis,* Dewey, becomes its var. *mirabilis,* Tuckerm.; var. *congesta,* Boott, is a globose-headed form from California and Oregon; var. *maxima,* Bailey, is the *C. Wrightii*, of Olney, and we think is more than a variety; *C. alata*, Torrey, is also reduced to varietal rank, probably correctly; *C. fœnea*, Willd., is the var. *fœnea*, Torrey, and in this form the species is found in Mexico (Muller, 1953; Berlandier, 1972); var. *mixta*, Bailey, is a large form from the Pacific coast, and var. *moniliformis*, Tuckerm., is the common sea-beach plant referred in Gray's Manual to *fœnea*, var. *sabulonum*, and is *C. silicea*, Olney. We prefer to regard this plant as of specific rank, its distant silvery spikes affording constant characters; the vars. *aperta*, Boott, and *invisa* of W. Boott are also accepted by Mr. Bailey.

Altogether 289 species are enumerated—224 of Eucarex and 65 of Vigneæ. The bibliography is arranged chronologically and is practically complete, and an excellent index to all species and groups mentioned is appended. N. L. B.

Carpenteria Californica, Torrey.—(Bot. Mag., xlii., Tab. 6,911.)

A beautiful plate and interesting description of this showy shrub, whose native habitat is still uncertain.

Catalogue of Canadian Plants. Part III. Apetalœ.—John Macoun. (Published by the Geol. & Nat. Hist. Survey of Canada, pamph. 8vo., pp. 228, Montreal, 1886.)

The third part of this model plant catalogue has recently been distributed; 82 pages are devoted to an enumeration of the Apetalæ, much attention being given to the distribution of the forest trees; 10 species of pine have been found and 11 of oak; the willows, elaborated by Mr. Bebb, number 49 species and 14 varieties.

The next 99 pages are devoted to additional species and localities for Polypetalæ and Gamopetalæ. *Stellaria graminea*, L., is claimed as native in the Eastern Provinces; *Ilex glabra* has been found in Nova Scotia; a new station for *Littorella*, at Lake Utopia, St. George, New Brunswick, is announced. This chapter of addenda brings the number of species of Dicotyledons up to 2205; 47 pages are occupied by a very complete index to species mentioned in the three parts now published.

Dog-tooth Violets, Erythroniums. (Garden, xxx., pp. 520, 521; Plate 573.)

It would seem that in England our pretty little Adder's-tongue is prized as well as its more showy sister, *E. Dens-Canis*, of which a beautiful plate is given.

Energy in Plant Cells.—T. H. McBride. (Pop. Sci. Month. Vol. xxx., pp. 180-184.)

Houstonia cœrulea. (Garden, xxx., p. 451, illustrated.)

Merulius lachrymans, the dry rot fungus. (Gard. Chron. xxvi., pp. 626, 627, fig. 125.)

An account of its destructiveness and the various methods of preserving timbers from its devastation.

Mesozoic Floras of the Rocky Mountain Region of Canada.—Sir J. W. Dawson. (Trans. Roy. Soc. Canada, iii., Section iv., pp. 1–22; four plates.)

An additional list of Phanerogams and Ferns collected mainly by Dr. G. M. Dawson and T. C. Weston. Several species of *Ginkgo* have been found in the Kootanie Series, which is regarded as the base of the Cretaceous in Western North America. The fossil flora of these strata consists almost entirely of Ferns, Cycads, and Conifers, while in the upper beds, numerous species of Angiosperms occur.

Ornamental Trees of Canada. (Garden, xxx., pp. 492, 493.)

Extract from a paper read by Mr. C. Gibb before the Montreal Horticultural Society.

Plan for Laboratory Work in Chemical Botany.—Lillie J. Martin. (Bot. Gazette, xi., pp. 311-313; also reprinted.)

Puccinia Malvacearum in Massachusetts.—W. G. Farlow. (Bot. Gazette, xi., pp. 309, 310.)

Remarks upon the Journey of André Michaux to the high Mountains of Carolina in December, 1788.—C. S. Sargent. (Am. Journ. Sci., xxxii., pp. 466–473.

During last season Prof. Sargent explored the head waters of the Savannah River with the main object of finding Michaux's station for *Magnolia cordata* and to determine the character and geographical distribution of this doubtful species. It is interesting to follow the progress of Michaux and his Cherokee guide as given in his Journal, and trace with Prof. Sargent 98 years later the course taken, and furthermore to find the same trails, and the same plants still in existence. He was able to identify the little "arbuste," with "feuilles denticulées" as *Shortia* and to obtain it in the same locality that Michaux described. In another station in the vicinity it is reported that "there are rods covered with it." The conclusion is reached that *M. cordata* is but one of the rarer forms of *M. acuminata* and Dr. Gray recognizes it as such and appends a description of *M. acuminata* var. *cordata.*

Revision of the North American Violets.—Memoranda of a.— Asa Gray. (Bot. Gazette, xi., pp. 253-256 and 289–293.)

The species are divided into two sections; the first of these again into six groups based upon differences in the foliage and stigma. *V. delphinifolia,* Nutt., is referred to *V. pedatifida,* Don., the earlier name. *V. palmata,* L, is regarded as the type of the numerous forms usually considered under *V. cucullata,* Ait., the latter being now var. *cucullata,* Gray, of the former. *V. renifolia,* Gray, is reduced to *V. blanda,* Willd., var. *renifolia*; the western *V. aurea,* Kellogg, is *V. præmorsa,* Dougl.; our common Dog Violet is to be known as *V. canina,* L., var. *Muhlenbergii,* Gray. The second section,—that of the pansies,—is represented only by the plant referred to *V. tricolor,* L., var. *arvensis,* DC.

Sylva of North America.—Some additions to the.—C. S. Sargent. (Bot. Gazette, xi., pp. 313–315.)

Professor Sargent detected in April last, *Termimalia Buceras,* B. & H., *Myginda integrifolia,* Lam., (*M? latifolia, Chapm*), and a new arborescent palm which Dr. Wendland names *Pseudophœnix Sargentii,* all on the Keys of Southern Florida.

Synopsis of North American Pines, based upon Leaf Anatomy.— John M. Coulter and J. N. Rose. (Bot. Gazette, xi., pp. 256–262, and 302-309; illustrated.)

Following up the late Dr. Engelmann's studies of the leaves of Conifers, Professor Coulter and Mr. Rose have endeavored to find characters in the anatomy of pine needles on which to base an arrangement of the species. Transverse sections cut from near the middle of the needle were used. The primary basis of classification is the occurrence in the one group of a single fibrovascular bundle, and in the other of two; other characters are the presence or absence of thick-walled cells next the epidermis and resin ducts; the distribution of stomata, and the position and relative size of the resin ducts.

Torsion in the Hollyhock, with some Observations on Cross-fertilization.—Thomas Meehan. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 291, 292.